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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/976,536	10/12/2001	Jason T. Griffin	1578.025 (10120-US-CIP2)	2444
44208	7590	07/16/2007	EXAMINER	
DOCKET CLERK PO BOX 12608 DALLAS, TX 75225			LAO, LUN YI	
			ART UNIT	PAPER NUMBER
			2629	
			MAIL DATE	DELIVERY MODE
			07/16/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

09/976,536

Applicant(s)

GRIFFIN ET AL.

Examiner

LUN-YI LAO

Art Unit

2629

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 May 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 44,45 and 47-117 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 44,45 and 47-117 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, "the QWERTY having number keys" cited in claim 44, "the mobile communication device having a pair of transmitter/receivers, a first transmitter/receiver for sending and receiving voice communications and a second transmitter/receiver for sending and receiving data communications" cited in claim 78, "the first side of said first upraised by facing the second side of said second upraised key, the second height different than the first height" cited in claim 109; the front side face shorter than the rear face and the first height of the right side face said first upraised key varying as a function of position between the rear and front faces, respectively" cited in claim 111; " the second height of the left hand side face of said second upraised key, is longer than the first height of the right hand side face of said second upraised key" cited in claim 114; "the first top face is of a lengthwise dimension greater than a widthwise dimension " cited in claim 116 and "the second face of said second upraised key is of a lengthwise dimension greater than a widthwise dimension" cited in claim 117 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended

Art Unit: 2629

replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 112***

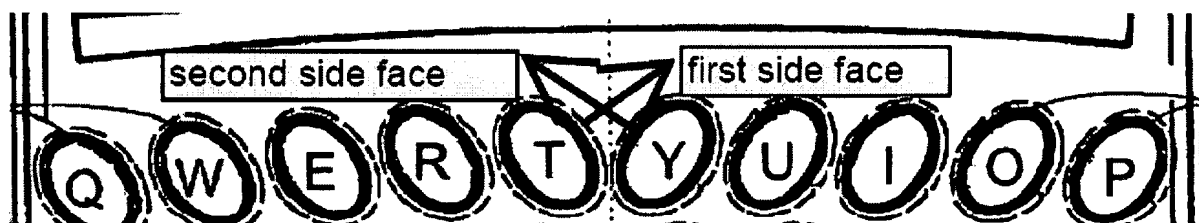
2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 109-117 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to

one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The limitation of “a first side of said first upraised by facing the second side of said second upraised key, the second height different than the first height” cited in claim 109 has not disclosed in the specification. The specification only disclose a non-symmetrical such as an oval-shape key, but not a upraised key(see paragraphs 41-42). The specification only keys may be displaced from each other and the arc may be either convex or concave such that the keys on the outer positions of the row and the specification does not disclose the second height different than the first height of the two facing keys(see figure 2 and paragraph 41).



The limitations of “the front side face shorter than the rear face and the first height of the right side face said first upraised key varying as a function of position between the rear and front faces, respectively” cited in claims 111-113 has not disclosed in the specification. The specification only disclose a non-symmetrical, such as a oval-shape key, or a diamond key, but not the front side face shorter than the rear face and the first height of the right side face said first upraised key varying as a

function of position between the rear and front faces, respectively(see figure 2 and paragraphs 41-42).

The limitation of “the second height of the left hand side face of said second upraised key is longer than the first height of the right hand side face of said second upraised key cited in claim 114 has not disclosed in the specification. The specification only disclose a non-symmetrical such as an oval-shape key , or a diamond key (see figure 2 and paragraphs 41-42).

The limitation of “the first top face is of a lengthwise dimension greater than a widthwise dimension “ cited in claim 116 has not disclosed in the specification. The specification only disclose a non-symmetrical such as an oval-shape key , or a diamond key (see figure 2 and paragraphs 41-42).

The limitation of “the second face of said second upraised key is of a lengthwise dimension greater than a widthwise dimension” cited in claim 117 has not disclosed in the specification. The specification only disclose a non-symmetrical such as an oval-shape key, or a diamond key (see figure 2 and paragraphs 41-42).

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 111-112 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 111 depends on claim 10 which has been cancelled by applicants.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 44-45, 47-52, 56-59, 64, 68-69, 75-77, 79-86, 90-105 and 107-108 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lieberman et al(6,385,463) and Hughes et al(WO 96/04618)

As to independent claim 44, Lieberman et al teach a handheld dual mode mobile communication device (mobile telephone and character input mode, see figure 3 and column 5, lines 16-32) that includes an integrated device housing (figure 3), a voice communication interface(118, 154) configured in the device housing for operating the device in a voice mode of operation(first mode, telephone mode), the voice communication interface comprising a speaker(118) and a microphone (116) positioned within the integrate device housing, and the dual mobile communication device, when used in the voice mode, is oriented with the top side surface positioned at a top of the device housing(see figures 1, 3 and column 5, lines 47-53).

Lieberman et al teach a data communication interface configured in the device housing for operating the device in a data mode of operation(second mode, character

Art Unit: 2629

input mode), the data communication interface comprising the display QWERTY keyboard, the QWERTY keyboard(126) being positioned within a front surface of the integrated device housing; when used in the data mode, is oriented with the side surface positioned at a top of the device, key of the QWERTY keyboard(126, alphanumeric keys) having letter keys that further have numbers associated therewith(see figures 1, 3; column 3, lines 29-65; column 4, lines 34-38 and column 5, lines 16-32). Lieberman et al teach a wireless transceiver(108) for sending and receiving voice communications when in the voice mode of operation and data communications when in the data mode of operation(see figures 1, 3; column 1, lines 11-35; column 2, lines 25-61). Lieberman et al teach a single, integrated device housing of an integrated device major axis extending between a top side surface and a bottom side surface of the housing(see figure 3). Libeman et al teach the speaker(118) is positioned at the top of the device housing, the display (120) is positioned below the speaker(118), and the QWERTY keyboard(126) and the microphone(116) are positioned below the display(120)(see figures 1, 3; column 3, lines 14-24; and column 3, lines 46-57).

Lieberman et al fail to disclose a device is a single device.

Hughes shows a handheld dual mode mobile communication (cellular phone and data communication) that includes a keyboard (14, QWERTY), microphone (404) are positioned at the top of the device housing; speaker (402) is positioned at the top of the device housing; and a display(12) are integrated into a single piece(see figures 13-15; abstract; page 3, lines 18-37; page 4, lines 1-21; page 20, lines 3-37 and page



Art Unit: 2629

21, lines 1-9). Hughes teaches the mobile communication device is oriented with the side surface positioned at a top of the device(vertical position)(see figure 13). It would have been obvious to have modified Lieberman with the teaching of Hughes, so as to reduce the cost of the mobile communication device by minimize the number of a keyboard and ensure more stable connections.

As to claims 45 and 84 as can be seen in figure 1; Lieberman et al as modified teach the device housing has a back surface and have generally rectangular shape(see Hughes's figure 13).

As to claim 47, Lieberman et al as modified teach the mobile phone includes a plurality of side surfaces connecting the front surface to the back surface(see Hughes's figure 13).

As to claims 48-49, as mentioned above, Lieberman et al teach the speaker(118) and the microphone(154) are located on the front surface and the bottom side surface respectively, and the microphone(154) is positioned below the QWERTY keyboard(126)(see Lieberman's figure 3; column 3, lines 20-23 and lines 28-65; and column 5, lines 47-57).

As to claims 50-51, Lieberman et al as modified teaches the keyboard(126), the microphone(154), the speaker(118) and the display(120) are all aligned along the major axis defined through the device housing(see Lieberman's figure 3 and Hughes 13).

As to claim 52, Lieberman as modified teaches the display of the device as shown in figure 3 is rectangular.

Art Unit: 2629

As to claim 56, Lieberman as modified by Hughes et al teach the QWERTY keyboard having a plurality of letter keys, wherein approximately half of the letter keys are positioned on a left hand side of the device housing and approximately half of the letter keys are positioned on a right hand side of the device housing(see Lieberman's figure 1, 3; column 3, lines 31-65 and Hushes's figure 13).

As to claims 57-59, Lieberman teach the dual handheld mode mobile communication device of claim 56, wherein the letter keys on the left hand side of the device housing are tilted at a negative angle with respect to a vertical reference line through the device housing and the letter keys on the right hand side of the device housing are tilted at a positive angle with respect to the vertical reference line(see figure 3).

As to claim 64, Lieberman as modified teach the mobile communication device comprising the letter keys are organized into three rows of keys, wherein each key in each row of keys is horizontally aligned across a front surface of the device housing with the other keys in the row of keys(see Lieberman's figure 3 and Hughes's figure 13).

As claim 68, Lieberman as modified shows that keys are symmetrically shaped(see Lieberman's figure 3 and Hughes's figure 13).

As to claim 69, it would have been obvious to have a square shaped keys since the keys would be changed since it has been generally recognized as being within the level of ordinary skill in the art and it would not effect the function of the keys.

As to claims 75-77, Lieberman as modified teaches a mobile communication device comprising a microprocessor(112), memory(114) to be connected to the microphone(116), the display(120), the speaker(118) and the keyboard(126)(see Lieberman's figures 1, 3; column 2, lines 62-68; column 3, lines 1-65).

As to claim 79, Lieberman teaches an antenna (110) coupled to a transmitter(104) and receiver(106)(see figures 1, 3; and column 2, lines 51-61).

As to claim 80, Lieberman as modified teaches using RF communication (radio)(see figure 1; and column 2, lines 51-61).

As to claim 81, Lieberman as modified teach wireless voice network and wireless data network (see figure 1; and column 2, lines 51-61).

As to claim 82, the choice of GSM voice network and data network GPRS is simply well known in the art and would be inherent in mobile phones.

As to claim 83, Lieberman et al teach storing user information in a memory(112, 114)(see figure 1; and column 3, lines 6-13).

As to claim 85, Lieberman et al show that the speaker(118), the display(120), the keyboard(126) and the microphone(154) are mounted within the front surface of the device housing (see Lieberman's figure 3 and Hughes's figure 13).

As to claim 86, Lieberman et al teach the QWERTY keyboard is symmetrically positioned from two of the side surfaces in the front surface(see figure 3).

As to claim 90, Lieberman et al teach a mode key for switching the device between the voice mode of operation(first mode) and the data mode of operation(second mode)(see figure 3 and column 5, lines 16-30).

As to claims 91-93, as can be seen in figures 1-3, it is inherent that the housing is formed using two housing (bottom and top in figure 3 of Lieberman), and wherein the two housing sections include a plurality of fasteners (where the two sections are connected), and a single circuit board (see figures 1-2).

As to claims 94-97, these claims simply shows that the device can be used as personal information manger that includes calendar, data items, appointment, etc. These limitations are described in both Lieberman and Hughes. For example, Hughes shows that the device can by used as a personal purchase or finance manager or PCMIA, which used to enter data, which fairly reads on the claimed limitations (see Lieberman's column 1, lines 10-35 and Hughes' figures 13-16; abstract; page 3, lines 18-37; page 4, lines 1-21 and page 25, lines 18-27).

As to claims 98-103, Hughes disclose serial port(130) that can connect the device to a host computer(80), and to load(update) encryption key from the host computer(80)(see figures 1, 3-4, 12-16; page 10; page 11, lines 1-10 and page 18, lines 3-32).

As to claim 104, Lieberman et al as modified teach a handheld dual mode device operable by a user and capable of voice communication(first mode) and data communication(second mode), the dual-mode device comprising a device housing having a front surface and having a longer dimension and a shorter dimension, the

longer dimension defining a major axis; and a keyboard(126) mounted at the front surface of the integrated housing, keys of the keyboard(126) including letter keys that further have numbers associated therewith, the letter keys laid out in QWERTY style(see figure 3; column 3, lines 28-65 and column 4, lines 36-38).

As to claim 105, Lieberman et al as modified teach a handheld dual mode device of comprising a display(120) mounted at the device housing, and wherein the keyboard(126) is mounted beneath the display(120)(see figure 3).

As to claim 107. Lieberman et al as modified teach a speaker(118), mounted at the front surface of the device housing, above the display(120)(see figure 3).

As to claim 108, Lieberman et al as modified teach a microphone mounted at the front surface of the device housing, permitting use by the user pursuant to the voice communication(first mode) and the data communication(second mode) while maintaining the device housing in a common orientation(see figure 3 and column 5, lines 15-31).

8. Claim 78 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lieberman et al(6,385,463) in view of Hughes et al(WO 96/04618) and Bruckert et al(6,018,651).

Art Unit: 2629

Lieberman et al as modified fail to disclose a pair of transmitter/receivers.

Brucker et al teach a mobile communication device having a pair of transmitter/receivers(114, 116 or 820, 822))(see figures 1, 8-11; abstract; column 24, lines 31-68; column 25, lines 1-8; column 26, lines 66-68 and column 27, lines 1-23). It would have been obvious to have a first transmitter/receiver(820) for sending and receiving voice communications(telephone mode) and a second transmitter/receiver(822) for sending and receiving data communications since the voice communication and data communication system could have different transceivers.

It would have been obvious to have modified Lieberman et al as modified with the teaching of Brucker et al, so as to improve receiver performance in dual mode communication system(see column 27, lines 20-23).

9. Claims 53-55 and 60-63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lieberman et al in view of Hughes et al(WO 96/04618) and Lookofsky(5,416,730).

As to claims 53-55 and 60-63, Lieberman et al as modified fail to point out the QWERTY keyboard having a NUM Lock, a CAP lock and function keys

Lookofsky teaches a QWERTY keyboard arrangement having a CAP lock, and function keys(see figures 5-6 and column 6, lines 52-58) and keys are oblong, oval or rectangular shaped(see column 6, lines 19-21). It would have been obvious to have modified Nishimoto as modified with the teaching of Lookofsky, since Lieberman as

mdofieid and Lookofsky both teach a keyboard is a QWERTY keyboard and it would have been well known that the QWERTY keyboard having a NUM lock, a CAP lock and functions keys, so as to provide a dual function keys and the shape of a key could be changed since changing the shape of a key would not effect the function of a key.

10. Claim 71 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lieberman et al in view of Hughes and Aldridge et al. (US patent NO. 6,047,047; hereinafter referred to as Aldridge).

As can be seen above, Lieberman et al as modified teaches the dual handheld mode mobile communication device having a serial port(see figure 1; column 1, lines 52-59 and column 3, lines 45-65). Lieberman et al as modified fail to disclose a serial port mounted along a side surface of the device or a serial port for interfacing the communication device to a host computer system.

Aldridge (figure 1) teaches a handheld device (30) which includes a serial port (30) (col. 4, lines 28-42).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include a serial port to Lieberman's device so as to facilitate the communication to other devices and therefore, increase the versatilities of the device.

11. Claims 65-66, 70, 72-74, 87-88, 109-110 and 113-117 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lieberman et al in view of Hughes et al and Grant (US patent NO. 5,500,643 provided by the Applicant).

As to claims 65-66, as can be seen above, Lieberman et al and Hughes teach all the limitations of claims 65-67 except the citation of having the keys configured along an arc across the front surface of the device housing.

However, Grant (FIGS. 1-2) shows an input device (10) wherein the keys are configured along an arc across the front surface, and shaped and convex or concave. Therefor, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the teaching of Grant having the keys configured in a arc shape to be included in Lieberman's device so as motivated by Grant, to eliminate ulnar-deviation of the actuating hand (abstract).

As to claim 70, as can be seen in figure 1, of Grant's device shows that the keys having circular shape.

As to claims 72-73, as can be seen in figure 1, Grant shows an auxiliary input/output (46) as a thumbwheel (col. 3, lines 64-65).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the teaching of Grant having a thumbwheel to Lieberman's device so as to simplify inputting data.

As to claim 74, the LED input/output is broad enough that the LED would have been part of the input/output device which as well known to be existed in the QWERTY keyboard.



As to claims 87-88, directed to thumbwheel, which as can be seen above, taught by Grant. Having the thumbwheel in the side or front surface would be obvious to a person of ordinary skill in the art, based on the design of the device and the required characteristics.

As to claims 109-110, Lieberman et al as modified teach a handheld mobile communication device keypad comprising: a first upraised key of the QWERTY keypad, the first upraised key having a first top face and a first side(e.g. right side) face that intersects therewith, the first side face extending a first height above the device face surface; and a second upraised key of the QWERTY keypad, the second upraised key having a second top face and a second side face(e.g. left side) that intersects therewith, the second side face extending a second height above the device face surface, the first side of the first upraised by facing the second side of the second upraised key, the second height different than the first height(see Lieberman's figure 3 and Grant's figures 1-2).

As to claim 113, Lieberman et al teach a first and second upraised key(see figure 3). It would have been obvious to have the front side face shorter than the rear face and the first height of the right side face said first upraised key varying as a function of position between the rear and front faces, respectively since changing the shape of a key would be generally recognized in the ordinary skill in the art and changing the shape of a key would not effect the function of a key.

As to claim 114, Lieberman et al teach a first and second upraised key(see figure 3). It would have been obvious to have the second height of the left hand side face of said second upraised key is longer than the first height of the right hand side face of said second upraised key since changing the shape of a key would be generally recognized in the ordinary skill in the art and changing the shape of a key would not effect the function of a key.

As to claim 115, Lieberman et al teach the first upraised key of the QWERTY keypad is positioned in a first QWERTY-keypad column and wherein said second upraised key of the QWERTY keypad is positioned in a second QWERTY-keypad column, aligned with the first QWERTY-keypad column(see figure 3).

As to claims 116-117, Lieberman et al teach a first and second upraised key(see figure 3). It would have been obvious to have the first top face is of a lengthwise dimension greater than a widthwise dimension or the second face of said second upraised key is of a lengthwise dimension greater than a widthwise dimension since changing the shape of a key would be generally recognized in the ordinary skill in the art and changing the shape of a key would not effect the function of a key.

12. Claims 65, 67, 106, 109-110 and 113-117 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lieberman et al in view of Hughes et al and Lichtenberg(5,336,001).

As to claims 65, 67, 106, Lieberman as modified fail to disclose the keys configured along a concave arc across the front surface of the device housing and the QWERTY keyboard having three rows of keys.

Lichtenberg teaches a QWERTY keyboard having three rows of keys and the keys configured along a concave arc across the front surface of the device(see figures 4-6; column 1, lines 10-26; column 5, lines 40-68 and column 6, lines 1-30). It would have been obvious to have modified Lieberman et al as modified with the teaching of Lichtenberg, so as to maximize the operator's comfort and increase the operator's speed and efficiency(see column 2, lines 24-41).

As to claims 109-110, Lieberman et al as modified teach a handheld mobile communication device keypad comprising: a first upraised key of the QWERTY keypad, the first upraised key having a first top face and a first side(e.g. right side) face that intersects therewith, the first side face extending a first height above the device face surface; and a second upraised key of the QWERTY keypad, the second upraised key having a second top face and a second side face(e.g. left side) that intersects therewith, the second side face extending a second height above the device face surface, the first side of the first upraised key facing the second side of the second upraised key, the second height different than the first height(see Lieberman's figure 3 and Lichtenberg's figures 4-6).

As to claim 113, Lieberman et al teach a first and second upraised key(see figure

3). It would have been obvious to have the front side face shorter than the rear face and the first height of the right side face said first upraised key varying as a function of position between the rear and front faces, respectively since changing the shape of a key would be generally recognized in the ordinary skill in the art and changing the shape of a key would not effect the function of a key.

As to claim 114, Lieberman et al teach a first and second upraised key(see figure 3). It would have been obvious to have the second height of the left hand side face of said second upraised key is longer than the first height of the right hand side face of said second upraised key since changing the shape of a key would be generally recognized in the ordinary skill in the art and changing the shape of a key would not effect the function of a key.

As to claim 115, Lieberman et al teach the first upraised key of the QWERTY keypad is positioned in a first QWERTY-keypad column and wherein said second upraised key of the QWERTY keypad is positioned in a second QWERTY-keypad column, aligned with the first QWERTY-keypad column(see figure 3).

As to claims 116-117, Lieberman et al teach a first and second upraised key(see figure 3). It would have been obvious to have the first top face is of a lengthwise dimension greater than a widthwise dimension or the second face of said second upraised key is of a lengthwise dimension greater than a widthwise dimension since

changing the shape of a key would be generally recognized in the ordinary skill in the art and changing the shape of a key would not effect the function of a key.

13. Claim 89 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lieberman et al in view of Hughes and Cairns (US patent N0. 5,930,703).

As can be seen above, Lieberman as modified teach all the limitations of claim 89 except the citation of having infrared data port for wireless transmitting and receiving data with another mobile communication device.

However, Cairns (figure 4) teaches a cellular phone for communicating with other similar cellular phone using infrared wireless communication (col. 6, lines 47-65). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use infrared wireless communication in Lieberman's phone, because wireless communication uses many types of communication technology such as radio, acoustic oriented based on the design choice. Furthermore, infrared is known for its affordability and reliability.

### ***Response to Arguments***

14. Applicant's arguments with respect to claims 44-45 and 47-117 have been considered but are moot in view of the new ground(s) of rejection.

Applicants argue that none of references teach a single, integrated device housing having longer dimension and a shorter dimension in which and a shorter

Art Unit: 2629

dimension in which the longer dimension defines a major axis extending between a top side surface and a bottom side surface and a keyboard having keys including letter keys that further have numbers associated therewith on page 16. The examiner disagrees with that since the combination of Lieberman and Hughes teach such limitations(see paragraphs 7).

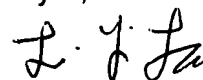
### ***Conclusion***

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lun-yi Lao whose telephone number is 571-272-7671.

The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on 571-272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

July 8, 2007

A handwritten signature in black ink, appearing to read 'L. Y. Lao'.

Lun-yi Lao  
Primary Examiner